

SEMICON[®] WEST

50 YEARS

VIRTUAL EVENT | JULY 20-23, 2020

PREVIEW GUIDE



FIFTY YEARS FOR SEMICON WEST AND HAPPY 50TH ANNIVERSARY SEMI

Empowered by 50 years of technology legacy, we are again demonstrating the capability to manage disruption through collaboration, by moving a live show to a virtual event.

The SEMICON West 2020 All-In Pass is your access to:

- Four days of Live and On-Demand programs
- 100+ virtual exhibits and unique pavilions
- 120+ industry presentations
- 24/7 access for 60 days until September 20!

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At Applied Materials, we help make possible a better future through the power of technology. We believe innovation happens by combining technology and talent in new ways. We don't see the limits of what we can achieve, and neither should you.

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SEMICON[®] WEST

50
YEARS

JULY 20-23, 2020
VIRTUAL EVENT

2020 has certainly been a year of surprise and uncertainty. We have been forced to reconsider how we work and interact on every level. But even in these difficult times, one thing that has remained consistent is SEMI's ability to support our members as essential businesses with market updates, collective input to trade and export control issues, shared best practices on COVID-19 response and remote working, and providing forums for members to continue to grow their business.



As a result, SEMICON West occurs in a virtual format for the first time in its 50-year history. As you've come to expect, we're featuring all the world-class talent and leading technologies that have come to symbolize the flagship microelectronics annual conference. You will have to see it to believe it.

This will be the deepest, most extensive online global industry event this year. Visitors will hear from, and interact with, visionaries and executives from across the microelectronics supply chain and its markets. Presentations feature emerging applications that demand the industry's design and manufacturing expertise.

Virtual exhibit booths throughout the detailed, interactive Exhibit Hall provide you the opportunity to network and gather insights just like on a physical show floor — attendees can stop by SMART technology pavilions and exhibitors' booths to view video content, download informative product information, and converse with supplier representatives. Sponsored Pavilions feature SMART Manufacturing, SMART MedTech, SMART Mobility, and SMART Workforce.



Attendees can also join technical sessions, participate in one-on-one or group meetings, and interact with colleagues and industry representatives in networking areas. Recorded sessions and exhibitor booth content will remain available on demand 24/7 for weeks after the close of the SEMICON West 2020 Virtual event.

We hope you'll join us for this historic gathering!



Dave Anderson, President of SEMI Americas



Navigating Semiconductor Industry disruption

Stop by our virtual booth to speak to our leading experts on topics and issues that matter most to you, including:

- Understanding the global industry implications of the U.S. push to build more Semiconductor manufacturing capacity
- Powering your enterprise through SAP S4 with Deloitte's DCHiPs capability
- Framing Semiconductor decision paths and industry trends in moving to the Cloud
- Enabling a more diverse, productive, and digitally savvy workforce

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AL GORE

Former Vice President
The United States



FEATURED KEYNOTE SPEAKER

GARY DICKERSON

President and
Chief Executive Officer
Applied Materials



STEVE BROWN

Futurist and Founder
Possibility and Purpose



TERRY HIGASHI

Former Chairman,
President and CEO
Tokyo Electron



R. NICHOLAS BURNS

Professor
Harvard Kennedy School
of Government



LEA GABRIELLE

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Global Engagement Center
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Co-Chief Executive Officer
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TIM ARCHER

President and CEO
Lam Research



BILL DAVIDOW

High-Technology
Executive, Venture
Investor, and Author

24/7 after each talk.



JOHN E. KELLY III
Executive Vice President
IBM



PAUL SAFFO
Professor
Stanford University;
Chair, Future Studies and Forecasting
Singularity University

LIVE KEYNOTES & EXECUTIVE PANELS

MONDAY, JULY 20

[Ajit Manocha Interview with Luc Van den hove](#)
[Presentation of SEMI Award for North America](#)

TUESDAY, JULY 21

Welcome and Opening Remarks

Dave Anderson, President, SEMI Americas
Ajit Manocha, President and CEO, SEMI
Bertrand Loy, President and CEO, Entegris,
Chairman of the Board, SEMI

[Al Gore](#), Former United States Vice President

[Gary Dickerson](#), President and CEO, Applied Materials

[Steve Brown](#), Futurist and Founder, Possibility and Purpose

WEDNESDAY, JULY 22

[John E. Kelly III](#), Executive VP, IBM

[Terry Higashi](#), Former Chairman, President and CEO, TEL

[R. Nicholas Burns](#), Professor, Harvard Kennedy School of Government

[Lea Gabrielle](#), Special Envoy, Global Engagement Center
U.S. State Department

[Paul Saffo](#), Professor, Stanford University; Chair, Future Studies
and Forecasting, Singularity University

THURSDAY, JULY 23

[Aart de Geus](#), Chairman and Co-Chief Executive Officer, Synopsys

[Tim Archer](#), President and CEO, Lam Research

[Bill Davidow](#), High-Technology Industry Executive and Venture
Investor, Author

EXECUTIVE PANELS

- [Bending the Energy Curve: Enabling Sustainable Growth of Big Data, AI, and Cloud Computing](#)
- [CEO Panel](#)—Moderator: [G. Dan Hutcheson](#), Chairman and CEO, VLSI Research
- [Legends Panel](#)—Moderator: [G. Dan Hutcheson](#), Chairman and CEO, VLSI Research
- [The Great Reset of Work](#)

FIRESIDE CHAT: [Discussion of a New Generation of Product Design for Google and MedTech](#)

FIRESIDE CHAT: [Examining How Technology, Innovation and Smart Investing is a Pathway Forward in Times of Racial and Economic Injustice](#)

FIRESIDE CHAT: [Discussion of How Tech Talent Will Manage the New Norm](#)

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EXECUTIVE PANEL: Bending the Energy Curve: Enabling Sustainable Growth of Big Data, AI, and Cloud Computing

PRESENTED BY



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ERIC MASANET, PHD
U.C. Santa Barbara

PANELISTS
CLIFF YOUNG, PHD, Google
NICOLA PEILL-MOELTER, PHD, VMware
MOE TANABIAN, Microsoft

SAMANTHA ALT, PHD, Intel
ROB AITKEN, PHD, ARM
ELLIE YIEH, Applied Materials

EXECUTIVE PANEL: The Great Reset of Work



GARY BOLLES
MODERATOR
Chair for the Future of Work
Singularity University



DAVE TOOLE
CEO
Gig Economy Group



JOHN HAGEL
Managing Director and
Co-Chairman
Deloitte Consulting,
Center for the Edge



JOS DIRX
Faculty AI and EI in Education,
Diversity and Inclusion,
Cross-Cultural Awareness
Singularity University

FIRESIDE CHAT: Discussion of How Tech Talent Will Manage the New Norm

ABBY SNAY
Deputy Secretary
Future of Work at California Labor
and Workforce Development Agency

DAVE TOOLE
CEO
Gig Economy Group

FIRESIDE CHAT: Discussion of a New Generation of Product Design for Google and MedTech



DR. JOSH MAKOWER
General Partner
NEA Healthcare



IVY ROSS
Vice President of Design for
the Hardware Organization
Google

FIRESIDE CHAT: Examining How Technology, Innovation and Smart Investing is a Pathway Forward in Times of Racial and Economic Injustice



**GAYLE JENNINGS-
O'BYRNE**
Co-Founder and
General Partner
WOCstar Fund
(Women of Color)



BOB PEARSON
Author, Professor,
Advisor, Chair
The Next Practices Group

Agenda Subject to Change

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Xenics nv

Yole Développement

YXLON

LIVE EXPO HALL

Chat with exhibitors during LIVE hours!

MONDAY, JULY 20

10:00am–12:00pm **LIVE Expo Hall Open**

TUESDAY, JULY 21

9:00am–3:00pm **LIVE Expo Hall Open**

WEDNESDAY, JULY 22

9:00am–3:00pm **LIVE Expo Hall Open**

THURSDAY, JULY 23

9:00am–3:00pm **LIVE Expo Hall Open**

Expo Pass Features—

- [QED-C Quantum Pavilion](#)
- SEMI Resource Center
- [Southeast Asia Pavilion](#)
- SMART Manufacturing
- SMART MedTech
- SMART Mobility
- SMART Workforce
- SEMI Lounge



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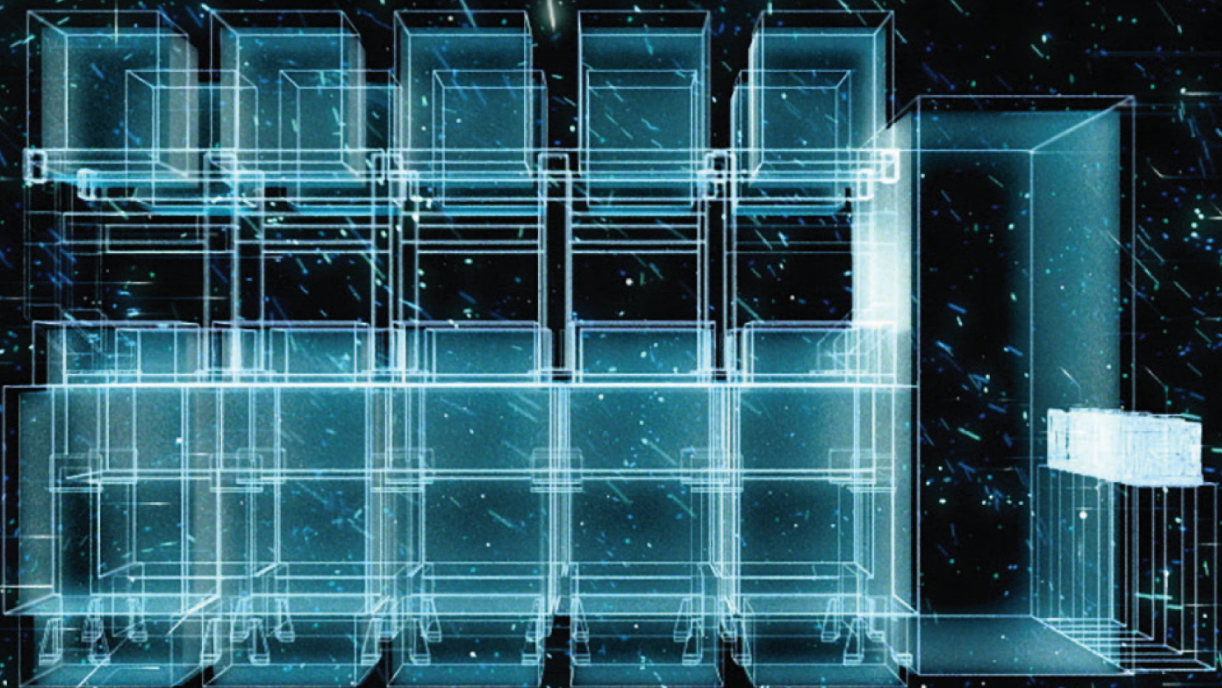
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BEST OF WEST AWARD

All exhibitors are eligible to submit their nomination for the Best of West!



The Best of West award recognizes innovative new products or services that are significantly advancing the electronics manufacturing supply chain or a manufacturing capability.

All exhibitors are eligible to submit their nomination for the Best of West. Now accepting applications until July 10.

ONLINE
NOMINATION
HERE!

“At SEMICON West 2020, scores of companies will be virtually exhibiting leading-edge processes, materials and technologies to demonstrate how they are helping to reshape electronics and drive the next generation of industry growth. We look forward to recognizing those among the world’s top innovations with the Best of West award.”

Dave Anderson, President of SEMI Americas, Organizer of SEMICON West

NETWORKING AT VIRTUAL SEMICON WEST: Stay In-Touch and Relevant in a Digital World

Just because you can’t shake hands you can still have an engaging virtual experience!

- Chat with Exhibitors in their booth
- Engage in real-time messaging with global attendees
- Virtually network in any room or theater

Meet and converse with people from anywhere around the world, on any device!

A Look to the Future

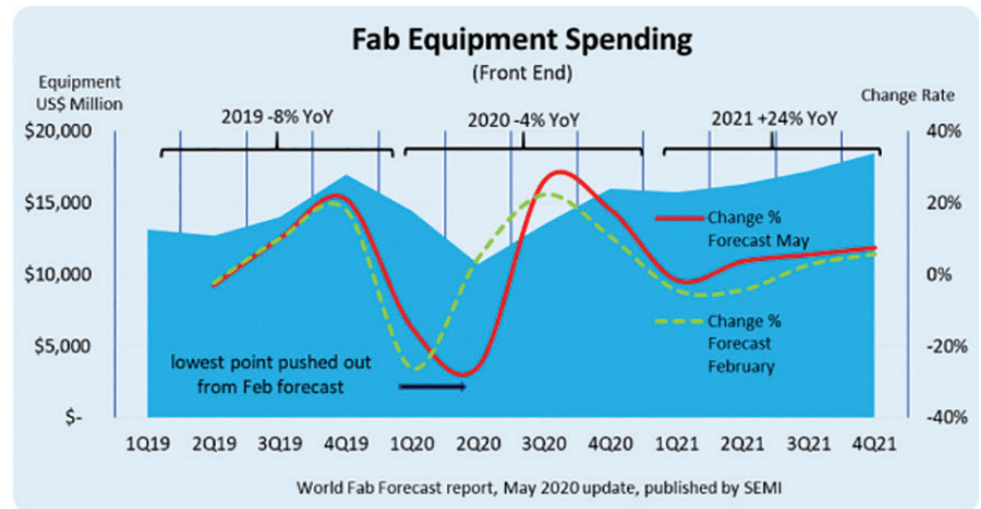
PETE SINGER, Editor-in-Chief, Semiconductor Digest

SEMICON West will occur in a virtual format for the first time in its 50-year history.

SEMI IS OBSERVING ITS GOLDEN 50TH ANNIVERSARY this year and the future has never looked brighter. In the last half century, the world has seen incredible advances made possible by semiconductor technology, including personal computers, mobile phones, digital photography, IoT, wearables, medical implants, medical machines and so much more.

Today, in the midst of a pandemic, it's clear that the world's reliance on semiconductor technology has never been greater. Where would we be without broadband internet, Zoom meetings, telehealth and yes, virtual trade shows, such as this year's SEMICON West? While nothing can replace face-to-face interactions, chance meetings at a reception or dining out at one of San Francisco's fantastic eateries, we can still hear great speakers, interact with suppliers and collect information at virtual booths, network in virtual settings and, of course, read magazines and show guides! "Empowered by 50 years of technology legacy, we are again demonstrating the capability to manage disruption through collaboration," notes Dave Anderson, president of SEMI Americas in a recent blog. "This is the signature of our industry's highly regarded business culture. Among what we have learned is that this pandemic has made all of us more vulnerable in a variety of ways, and in turn has accelerated our unity as an industry community like never before."

SEMICON West has always had a focus on embracing the future and this



year is no exception. In the relatively short term, we can expect to see major advances in artificial intelligence (AI) and machine learning, neuromorphic and quantum computing, bioelectronics, 5G communication, virtual and augmented reality, automated driving, and SMART everything: SMART manufacturing, SMART MedTech, SMART Mobility and SMART Workforce (all virtual Pavillions at this year's show).

In the longer term, it's almost impossible to overestimate how significantly the semiconductor technology that is the focus of SEMICON West will impact the world in the future. According to the World Economic Forum, the value of digital transformations in the new industrial revolution is estimated at \$100 trillion in the next 10 years alone. Among the many stunning outgrowths of this disruption, AI is widely expected to have the largest societal impact across industries including automotive, medical, financial, agriculture and

energy. Autonomous mobility, ubiquitous connectivity, novel materials and advanced manufacturing technologies will also be key drivers of innovation.

To help give some perspective on this during show week, we'll be hearing from a variety of seasoned futurists. **AI Gore**, one of this year's keynote speakers, will update attendees on the global challenges our industry can help solve by driving advances in the latest cutting-edge technologies. In his 2013 book *The Future Six Drivers of Global Change* he accurately predicted a highly connected world. "The emergence of a planet-wide electronic communications grid connecting the thoughts and feelings of billions of people and linking them to rapidly expanding volumes of data, to a fast growing web of sensors being embedded ubiquitously throughout the world, and to increasingly intelligent devices, robots, and thinking machines, the smartest of which already exceed the capabilities

of humans in performing a growing list of discrete mental tasks and may soon surpass us in manifestations of intelligence we have always assumed would remain the unique province of our species,” he wrote.

Another keynote speaker, futurist and author **Steve Brown** (formerly the futurist and chief evangelist for Intel), will identify six strategic technologies that will shape every business in the 2020s and present the semiconductor manufacturing industry with a roadmap for emerging stronger from the disruptions caused by COVID-19. In his 2020 book *The Innovation Ultimatum*, Brown wrote “In the next decade, a suite of six strategic technologies – artificial intelligence, Blockchain, The Internet of Things, augmented reality, autonomous machines and 5G networks – will drive unprecedented innovation into products and services, creating entirely new business models along the way.” He also cautions that people need to embrace this change in new ways. “Investment in information technology will be a strategic imperative for every company. Every company will become a technology company, and every company will become a data company. Business operations will be retooled using both process automation and worker augmentation.” Other keynote talks:

- **Gary Dickerson**, president and CEO of Applied Materials, will highlight the need for Sustainable AI and discuss actions that can be taken by companies throughout the semiconductor and computing value chain, both individually and collectively, to enable a better future.
- **Ambassador (Ret.) Nicholas Burns** from the Harvard Kennedy School of Government will address the changing geopolitical landscape.
- **Gayle Jennings O’Byrne**, Co-Founder of Women of Color Fund (WOCstar), will examine “how technology, innovation and smart in-

vesting is a pathway forward in times of racial and economic injustice.”

- Predicting that the volume of global data will double every 12-18 months, **Dr. John E. Kelly III**, senior vice president and director, IBM Research, will describe an expected scale of growth that will dwarf previous eras of computing and produce “an enormous number of opportunities” for microelectronics and its wide range of markets.
- **Paul Saffo**, forecaster for large-scale and long-term technology change, will discuss “Chasing fire: a glimpse into our accelerating future.” He will look at how to address the gap between accelerating technologies and slower-moving cultural and institutional adaptation, which he views as the single greatest challenge facing society.
- Featuring lessons from the past half century, industry legend **Tetsuro “Terry” Higashi**, former Chairman and CEO of Tokyo Electron, navigated TEL through some of the equipment sector’s toughest days as he built a global powerhouse, partially due to his implementation of fully integrated co-development teams in Japan and the U.S.

Manufacturing trends

Semiconductor manufacturing is without question the most complex and capital-intensive production endeavor on the planet. Advanced semiconductor fabs cost \$12 billion or more and require an extensive global supply chain for sophisticated process equipment and materials, software, packaging and test services, and the complex infrastructure inside the fab (the cleanroom, chemical/water and gas handling, automation/robotics, vacuum pumping and exhaust gas abatement gear, for example). This technology, “behind” the technology of microprocessors and memory — as well as displays, MEMS, bioelectronics,

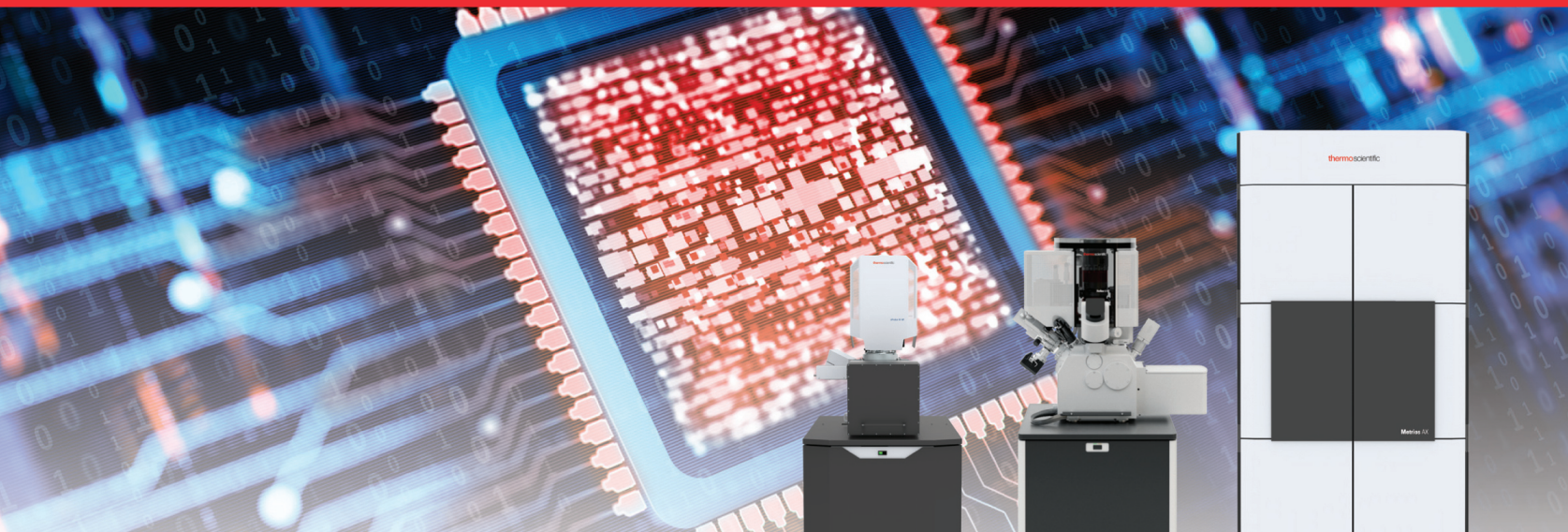
power electronics, analog circuits, flexible electronics, optoelectronics/photonics and every other electronic device — is what SEMICON West is all about.

The semiconductor industry has followed the path defined by Moore’s Law for decades, where chip functionality is roughly doubled every two years and the cost is cut in half. This has largely been accomplished by continually reducing on-chip dimensions through advanced lithographic techniques. Today, thanks in part to Extreme Ultraviolet Lithography (EUV), the industry has 5nm geometries in volume production and is pushing to 3nm and smaller. However, the cost and technical challenges in doing so has many looking to alternatives to simple scaling, such as stacking and connecting chips with advanced packaging, also known as heterogeneous integration. Alternative lithography approaches are also being explored, such as directed self-assembly (DSA) and nano-imprint lithography (NIL).

The industry has seen a shift to more complex device structures, such as FinFET transistors and 3D NAND memory in order to optimize the four key factors of power, performance, area and cost (PPAC). This means that film deposition and etch processes — part of the patterning process — now require atomic layer precision. The industry has greatly increased the use of new materials, well beyond the silicon, silicon dioxide, aluminum (then copper) and a handful of dopants that made up earlier devices. Exploration of new technology “beyond CMOS” — the conventional transistor technology — is also well underway, as is the use of “emerging” memory technology. Gate-all around (GAA) transistors, spin-transistors, phase-change memories, magnetic memory (MRAM) and resistive memory are all in the new playbook.

Another significant trend in the manufacturing arena is the increased use of cloud computing and

Continued on page 26



The NanoProber IV System, Helios 5 DualBeam, and Metrios AX S/TEM

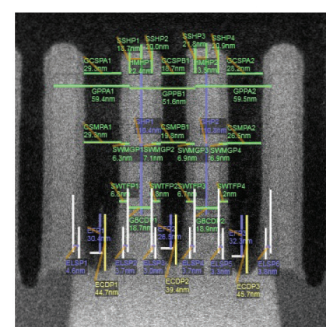
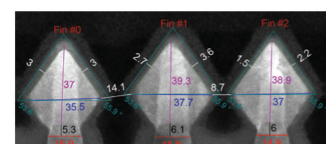
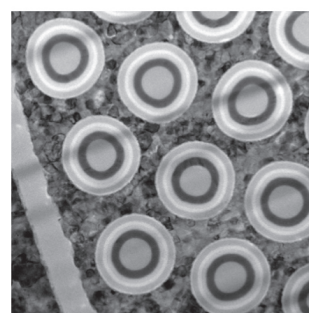
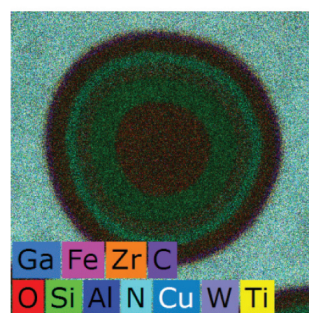
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| Cerebras Systems
- AI Architecture and Applications
| Cornell University

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- [LIVE]** • Advanced Manufacturing Processes for a Changing Industry: Lithography
- [LIVE]** • Metrology/Inspection to 2nm | NIST
- [LIVE]** • Scaling DRAM Below 1znm | Micron Technology
- [LIVE]** • Update on EUVL/getting to 2 nm | ASML
 - A Path to 2nm | imec
 - Energizing Global Innovation | Leti
 - Hi-Fidelity Patterning (3 nm, 2 nm) | TEL
 - Accelerating Process Innovation/HVM
| Applied Materials

ADVANCED PACKAGING

- Heterogeneous Integration Applications
- Heterogeneous Integration Components
- Heterogeneous Integration Processes

PARTNER PROGRAMS

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- How and When State-of-the-Art Si-Photonics Will Replace Chip-to-Chip Interconnect in VLSI | SOI Industry Consortium
- Enabling SiPh Packaging Features to Unleash Next Gen C2C Solutions in a Wild West World | GLOBALFOUNDRIES
- Leveraging the Benefits of Co-Packaged Silicon Photonics to Meet Future Data Center/HPC Needs
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- Si-Photonics Market Perspectives: From Pluggable Transceivers to Co-Packaged Switches ASIC
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- Transitioning to Integrated Optics | Microsoft COBO

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| Lam Research
- [LIVE]** • Hiring Heroes—Creating a Path from Military to Civilian Workforce | TEL
- [LIVE]** • Supplier Diversity: We Hear You and Stand Together
| Applied Materials | Intel | TEL
 - Attracting and Retaining a Diverse Workforce
 - Building a Better Network: Crucial Connections
| FormFactor

MATERIALS

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- Moore's Law Enablers | Lam Research
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QED-C QUANTUM PAVILION

- Fabricating Quantum Technologies: Supporting Research—Moving to Commercialization | Raytheon BBN
- A Path Towards the Automation of Superconducting Electronic and Quantum Systems | Synopsys

QED-C

SEMICONDUCTOR COMPONENT INSTRUMENTATION AND SUBSYSTEMS [SCIS]

- Component Quality in Microelectronics Manufacturing

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- System Interconnect Scaling Enabled by 3D and Photonics Technologies
- The Road to 6G: Compound Semiconductor Technologies for a Smart Connected World
- Computing in the Post-Moore Era



Programs Subject to Change



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data,
thinkers,
doers,
solutions,
us to stay connected
and build a future together.

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SMART MARKETS

Understanding the markets has always been key to business success. However, these are unprecedented times. Businesses across the globe are facing a host of new challenges in the wake of a pandemic and geopolitical tensions. With supply chains disrupted and markets dislocated, industry leaders are debating how long until we will see an upturn and how strong the rebound will be.

The semiconductor industry is accustomed to cycles and has weathered many ups and downs over the years. While today's environment may be dire, leaders can recognize opportunities in an age of digital transformation, IoT, AI, and 5G. Join market experts as they provide essential information on how businesses can navigate through these turbulent times.

MARKET SYMPOSIUM

WEDNESDAY, JULY 22

- **Welcome and Session Overview**
Clark Tseng, Director of Industry Research and Statistics, SEMI
- **Macroeconomic Overview: Upstream Optimism vs Downstream Pessimism: Extreme Uncertainty and the Economic Outlook**
Duncan Meldrum, Chief Economist, Hilltop Economics
- **Geopolitical Implications/Economic Aspects/China**
Handel Jones, Founder and CEO, International Business Strategies.
- **Semiconductor Trends and Forecast**
Bob Johnson, Research Vice President, Gartner
- **SEMI Market Outlook, Semiconductor Equipment and Materials Forecasts**
Clark Tseng, Director of Industry Research and Statistics, SEMI
- **IC Packaging Technology and Market Forecast Update**
E. Jan Vardaman, President, TechSearch International
- **World Fab Forecast: Investment and Capacity Trends**
Christian Dieseldorff, Senior Principal Analyst, SEMI

BULLS & BEARS

THURSDAY, JULY 23 | 11:30am-12:30pm

The microelectronics industry continues to be a positive force for change, showing not only resilience but a path forward to global economic growth. During the COVID-19 pandemic, high tech companies are on the forefront, driving fundamental solutions and changes in medical, communication, energy, and environmental security which deliver social innovations worldwide. This year's Bulls & Bears panel highlights ways corporate stewardship, social strategies, and revolutionary technologies are redefining the future and shaping a better world through technology.

Our moderator, Leslie Norton of Barron's will lead analysts in the discussion.

Participants include:

- **Barron's**
- **Evercore ISI**
- **Parnassus Investments**

REGISTER NOW

Programs Subject to Change

SMART MANUFACTURING

VIRTUAL PAVILION

Experience data-sharing breakthroughs that are creating smarter manufacturing processes, increasing yields and profits, and spurring innovation across the industry in the SMART Manufacturing Pavilion.

Today's explosive growth in data is driving enormous demand for new technologies to analyze and leverage it. Big Data, AI, and other cognitive learning technologies are bringing big opportunities to the electronics industry. See how you can integrate them into your manufacturing processes.

Here are the SMART Manufacturing programs topics:

- [LIVE]** • **Achieve Manufacturing Excellence Through Knowledge Empowerment** | BISTel America
- [LIVE]** • **AI-Powered Metrology and Inspection for Semiconductor Manufacturing** | Onto Innovation
- [LIVE]** • **Full Stack Computational Optimization Through Virtual Fabrication** | Coventor, A Lam Research Company
- [LIVE]** • **Handling Data Sources, Velocity, and Volume for APC in Semiconductor Backend Assembly, Test, and Packaging Facilities** | Applied Materials
- [LIVE]** • **Improving Production Efficiency with Data Analytics Tool** | Keysight
- [LIVE]** • **Using Quartz Crystal Microbalance Technology to Provide Real-Time Process Monitoring** | ON Semiconductor
- **Dark Yield: Defect Rates You Don't Know and How AI Can Help** | Instrumental
- **Embracing Smart, Connected Manufacturing** | Rockwell Automation
- **Enabling Smart Manufacturing Through Vacuum Eco-System Operational Excellence** | Edwards
- **Incorporating Subfab into Factory and Tool Digital Twins** | FPS- INFICON
- **Integrated Metrology Sampling** | FPS- INFICON
- **Keep Your Employees Safe, Connected and Productive Under the "New Normal"—Augmented Reality Strategies for the Semiconductor Industry** | PTC
- **Maintenance Management in Smart Manufacturing** | GLOBALFOUNDRIES | INFICON
- **To Achieve "More Than Moore" We Need a Smarter Approach** | Lam Research
- **Predictive Maintenance—A Data and AI Driven Approach to Manufacturing Excellence** | Siemens

SMART MANUFACTURING PAVILION SPONSORS



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SMART MEDTECH

VIRTUAL PAVILION

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PAVILION
HERE!

SMART MedTech drives the collaboration and integration of semiconductor electronics with medical/healthcare applications focusing on patient-centric infrastructures. The use of semiconductors in the field of medicine continues to enhance “connected healthcare” applications to further promote monitoring, data sharing, and analysis and will continue to grow as technological advancements emerge.

Market segments include, but are not limited to: Consumer Medical Electronics; Medical Imaging; Therapy Devices and Portable Health Monitoring promoting the use of 3D Printing; Augmented Reality; Robotics; Surgical Procedures; Implants; and Ingestible.

Here are the SMART MedTech presentation topics:

- [LIVE]** • [Active on Skin Sensing Using Stretchable Substrates and Liquid Interconnects](#) | Liquid Wire
- [LIVE]** • [Highly Conductive Conformal Circuitry for Wearable and Implantable Medical Devices with Printed Electronics](#) | Optomec
- [LIVE]** • [Medical Wearables and Point of Care Devices: Toward Innovative Solutions to Meet Healthcare Challenges](#) | Yole Développement
- [LIVE]** • [Wearable Technology and Blood Pressure Monitoring: Addressing the Global Hypertension Problem](#) | Valencell
 - [A Force Gauge Method to the Tiny Head of Assembly Machine for Health Care Modules Production](#) | Powertech Technology
 - [Active on Skin Sensing Using Stretchable Substrates and Liquid Interconnects](#) | Liquid Wire
 - [Alertgy Technology for Corona Virus Screening](#) | Alertgy
 - [De-Risking the MedTech Supply Chain to Bring Products to Market Faster](#) | DSV Inventory Management Solutions (IMS)
 - [Innovative Laser Micromachining Processes in the Production of Medical Devices](#) | 3D-Micromac AG
 - [In-Vitro Screening of Materials and Laminates by Atomic Layer Deposition for Medical Device Coatings](#) | Picosun Group
 - [Portable Dual Energy X-Ray](#) | KA Imaging
 - [The Inflection Point Has Arrived for Remote Patient Monitoring Using Wearable Technology](#) | Valencell
 - [Transforming Smart Devices to Smart MedTech Devices to Address New COVID-19 Demand](#) | Altran

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SMART MOBILITY VIRTUAL PAVILION

New trends and requirements in the automotive industry have been driving the development of a wide range of automotive semiconductors including processors, sensors, memory, and analog ICs. Our experts will discuss the technologies the semiconductor industry is developing to support the automotive industry, as well as other challenges the automotive semiconductor industry will need to consider as they develop their next-generation technologies. The impact of COVID-19 on the Automotive Sector will also be discussed.

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PAVILION SPONSOR**

ADVANTEST

SEMICON WEST GOLD SPONSOR

Join us to hear these key topics this year:

[LIVE] • **The New ICE Age: The \$200B Opportunity for Automotive Semiconductors** | KPMG

[LIVE] • **Automotive Startups and VC Panel: Impact of COVID-19 on Global Automotive Industry**
| Autotech Ventures | Helm.ai | Robert Bosch Venture Capital | SafeAI | Silicon Valley Future Capital | Ziiiko Robotics

[LIVE] • **RoboTaxi Thrives to Transform Urban Mobility in Asia** | AutoX

- **Artificial Intelligence, Cloud Computing and 5G for Smart Mobility** | ARM | SAP
- **Automotive Market and Technology Trends, Forecast, and Outlook** | Macronix | McKinsey & Company
- **Automotive Sensors for Smart Mobility** | Advantest | Lam Research | Pony.ai
- **Materials and Packaging for Automotive Semiconductors** | Amkor Technology | Entegris
| Fomalhaut Techno Solutions | Robert Bosch

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DISPLAY BY

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DISPLAY BY

autox



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SMART WORKFORCE

VIRTUAL PAVILION

Career Opportunities—Engaging with Industry

How do you make the most of your participation in this year's virtual SEMICON West? Where do you start? Students and young professionals can meet with company representatives in their virtual booths to discuss career opportunities.

It's an excellent entrée to microelectronics and great way to begin your SEMICON West experience. Even virtually you can engage with the industry. Career opportunities in semiconductor manufacturing are vast due to the depth and breadth of the industry. The SMART Workforce presenters provide industry insights and tools for what it takes to build a career in microelectronics, including resume building, the importance of networking, and crucial conversations.

Here's what industry leaders are talking about in the SMART Workforce Pavilion:

[LIVE] • **A Day in the Life of an Engineer—Lessons in Failure, Adapting to Risk** | TEL

[LIVE] • **The New Reality-Digital Internships** | KLA

- **A Day in the Life of an Engineer** | Applied Materials
- **Crucial Conversations** | Meriwest Credit Union
- **Job Search During Uncertain Times** | Advantest | Lam Research
- **Mentoring for Success** | KLA
- **Resume Building and Interviewing Skills** | Applied Materials
- **Shaping a Better World Through Technology** | GE Research

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STUDENT ONLY REGISTRATION

Programs Subject to Change

SEMI AMERICAS EVENTS

MARK YOUR CALENDAR!

Technology Leadership Series of the Americas Events

The **Technology Leadership Series of the Americas** is a collection of seven major events representing the various technology communities in our industry. These programs connect the 2,300+ member companies and over 1.3 million

global professionals to advance the technology and business of electronics manufacturing and the design-supply chain.

There are numerous ways for you to participate in these events to connect with the industry and grow your business.

ATTEND | PRESENT | SPONSOR | EXHIBIT

SAVE THE DATES FOR THESE 2020-2021 EVENTS

Explore these upcoming programs and fill out the Interest Form on each website to get connected for the latest event updates.



VIRTUAL EVENT
JULY 20-22, 2020



VIRTUAL EVENT
AUGUST 24-26, 2020



VIRTUAL EVENT
SEPT 28-30, 2020



VIRTUAL EVENT
OCTOBER 2020



VIRTUAL EVENT
NOVEMBER 2, 2020



JAN 10-13, 2021
HALF MOON BAY, CA



FEB 22-25, 2021
SAN JOSE, CA



TEST VISION SYMPOSIUM

Test Vision Symposium—Expanding the Role of Test is the premier event for semiconductor and system test experts. It is organized with a vision towards the future of test, to discuss upcoming trends, innovations, and requirements.

The symposium features papers and posters focused on industry trends, challenges, and solutions facing the test community as well as virtual networking opportunities for test professionals to connect and engage.

TEST VISION SYMPOSIUM—EXPANDING THE ROLE OF TEST

JULY 21-23, 2020

- **5G NR Semiconductor Test Challenges** | Advantest America
- **Building the Next Generation Test Method Standard** | Cohu
- **Democratizing Deep Learning to Accelerate Image-Based Defect Inspection** | QuEST Global
- **Laser-Based 3D-Magnetic Field Sensor Formation** | 3D-Micromac
- **Optimization of 5G OTA Antenna Production Test Interfaces** | Cohu
- **Optimization Techniques for C-Bit Utilization on the ETS-364** | Texas Instruments
- **Optimizing Package Yield and Reliability with X-Ray Inspection** | SVXR
- **Phase Contrast X-Ray Micro-CT for Non-destructive Imaging of LEDs** | KA Imaging
- **Production Wafer Probe of 77-81 GHz Automotive Radar Application** | Cohu | NXP
- **RF Test Strategies and Solutions for 5G Millimeter Wave Devices** | Teradyne
- **Smart Factory for Inspection in the Semiconductor Industry** | YXLON International
- **Test Cell Management for Enabling Smart Manufacturing** | Advantest America
- **The Detection Methodology for External Contaminations to Assembled IC in ATE** | Texas Instruments
- **Unique Solution to Probe Constraints for High Current Limit Testing at Probe** | Texas Instruments
- **Vision-Based System for Operator Activity Recognition** | Infineon Technologies

SEE THE
AGENDA!

Programs Subject to Change

Continued from page 15

remote operation for process control, especially now as factories have continued operations in spite of the COVID-19 pandemic. Although workers in cleanrooms — where masks, gloves and gowns have long been mandatory requirements — might be the most inherently protected people on the planet, the challenges of bringing in field service personnel and fab managers has led to a significant increase in remote control and e-diagnostics. It's somewhat ironic that the industry that invented the tools for smart manufacturing has been relatively slow to adopt it internally due to security concerns, but that is finally happening. The cobbler's children are getting new shoes!

SEMICON West exhibitors are addressing all of the above challenges in one way or another. Whether it be something as seemingly simple as an o-ring for harsh processes (which are not at all simple in that they must be made of advanced polymers to eliminate shedding, which leads to particulate contamination), or more complicated components and subsystems — a valve, a mass flow controller, a gauge, an epoxy, a power supply, a vacuum pump, a robot, a wafer chuck, a toxic gas abatement system — or a multi-million dollar piece of etch or deposition equipment, they are all part of the intricate worldwide supply chain and each part must work flawlessly for the overall operation to be successful.

At SEMICON West this year, attendees will have the opportunity to connect with exhibitors from SEMICON Southeast Asia in a regional pavilion. Additional sponsored pavilions will feature SMART Manufacturing, SMART MedTech, SMART Mobility, SMART Q-CED Quantum, SMART Southeast Asia, and SMART Workforce. Virtual exhibit booths throughout the detailed, interactive exhibit hall provide the opportunity to network and gather insights just like on a physical show

floor — attendees can stop by SMART technology pavilions and exhibitors' booths to view video content, download informative product information, and converse with supplier representatives.

Attendees can also join technical sessions, participate in one-on-one or group meetings, and interact with colleagues and industry representatives in networking areas. Recorded sessions and exhibitor booth content will remain available on demand 24/7 for 60 days after the close of the SEMICON West 2020 Virtual event.

Fab spending to head up

Although the pandemic has had an unavoidable impact on electronics demand, it's expected to be short-lived. A recent SEMI analysis shows that 2021 is poised to mark a banner year for global fab equipment spending with 24 percent growth to a record US\$67.7 billion, 10 percent higher than the previously forecasted US\$65.7 billion, and all product segments promising solid growth rates (according to the second-quarter 2020 update of the SEMI World Fab Forecast report). Memory fabs will lead worldwide semiconductor segments with US\$30 billion in equipment spending, while leading-edge logic and foundry is expected to rank second with US\$29 billion in investments.

The SEMI World Fab Forecast report also shows the worldwide fab equipment spending trough in 2020 shifting from the first to the second quarter (Figure 1).

The 3D NAND memory subsegment will help power the spending spree with a 30 percent jump in investments this year before tacking on 17 percent growth in 2021. DRAM fab investments will surge 50 percent next year after declining 11 percent in 2020, and fab spending on logic and foundry, mainly leading edge, will trace a similar but more muted trajectory, rising 16 percent 2021 after an 11 percent drop this year.

Some segments will see lower fab

equipment spending but impressive change rates nonetheless. Image sensors will notch an impressive 60 percent increase in 2020 and add a 36 percent surge in 2021. Analog and mixed signal will grow by 40 percent in 2020 and 13 percent in 2021. And power-related devices are forecast to register 16 percent growth in 2020 with a healthy jump of 67 percent in 2021.

Get connected!

At the first SEMICON West in the early 1970s, exhibitors only partially filled the Hall of Flowers at the San Mateo County Fairgrounds, but incredible growth was seen immediately. In 1974, SEMICON West had its first sellout year. The show eventually expanded to fill the space at the fairgrounds, including exhibits at the Racetrack. Attendees are unlikely to forget the dusty shoes, the meetings in rented RVs, the Dixieland jazz bands and the general excitement of being involved with something that was sure to change the world.

50 years later, the world has changed dramatically in many ways, but the same innovation that drove the success of the early SEMICON West days is still in play. All the stakeholders — SEMI, presenters, attendees and exhibitors — have always quickly adapted to make it work, and this year the tradition continues. So get connected, stay involved, enjoy the talks, the exhibits, the pavilions and the networking. Celebrate how far we've come, then think ahead about how far we have yet to go. Have a great show everyone!

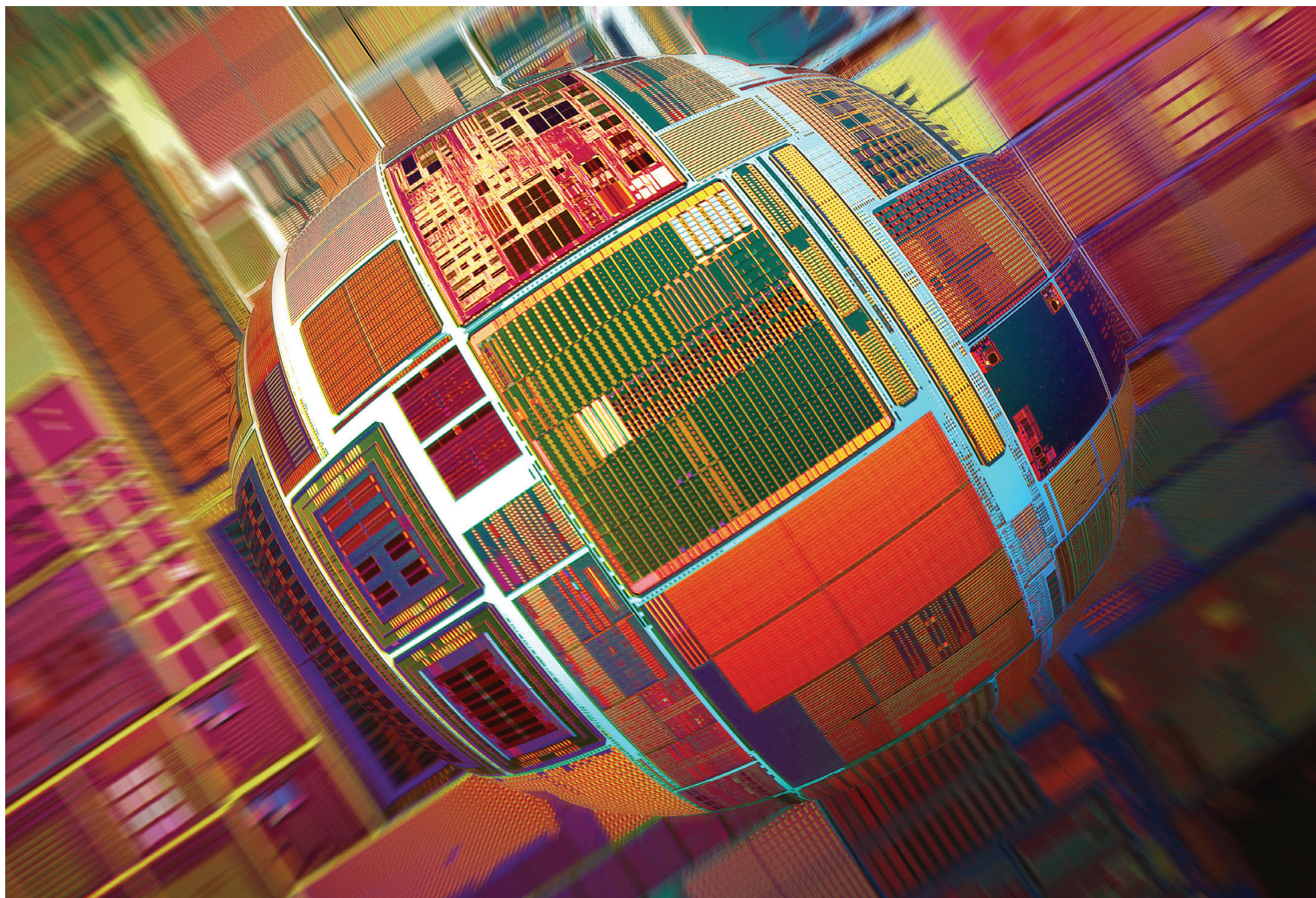
About the author

Pete Singer is the Editor-in-Chief of Semiconductor Digest, a business-to-business magazine and website launched in 2019 with business partner and publisher Kerry Hoffman. He was previously the editor of Solid State Technology for 11 years and Semiconductor International for 25+ years. He has attended every SEMICON West since 1982. 

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